

**A Note on an Interest Rate Forecast Risk Factor (IRFRF) and the RSR
Target Established by the Dynamic Capital Asset Test (DCAT)**

**Manitoba Public Insurance
2017/18 GRA**

**CAC Manitoba
Submitted by the Public Interest Law Centre
Authored by
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September 26, 2016

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Terms of Retainer

The Consumers' Association of Canada, Manitoba Inc. (CAC Manitoba), through the Public Interest Law Centre has retained my services to provide evidence regarding the Manitoba Public Insurance (MPI) 2017 Rate Application. In particular, I have been asked to provide expert analysis on issues associated with the IRFRF, the DCAT report and the appropriate target for MPI's Rate Stabilization Reserve (RSR).

The evidence was prepared by me and I am responsible for the analysis and conclusions.

Declaration of Impartiality

As stated in my terms of retainer, it is my duty to provide evidence that:

- is fair, objective and non-partisan;
- is related only to matters that are within my area of expertise; and
- provides such additional assistance as the Public Utilities Board ("PUB") may reasonably require to determine an issue.

I understand that my duty in providing assistance and giving evidence is to help the PUB. This duty overrides any obligation to CAC Manitoba.

Qualifications of Dr. Wayne Simpson

Wayne Simpson has a PhD from the London School of Economics (1977) and is a Full Professor in the Department of Economics at the University of Manitoba, where he has taught since 1979. His areas of academic expertise include labour economics, applied econometrics, applied microeconomics, and economic and social policy analysis. He has authored or co-authored three books and more than fifty peer-reviewed articles on these and related topics, including two papers on the impact of risk on the behaviour of the firm. He is currently on the editorial board of *Canadian Public Policy*, Canada's foremost peer-reviewed academic journal for economic and social policy, and the executive council of the Canadian Economics Association. He was a 2014 recipient of

the McCracken award for the development and analysis of economic statistics from the Canadian Economics Association.

In addition to his academic career, Dr. Simpson has worked at the Bank of Canada, the federal Department of Labour, and the Economic Council of Canada. He has also served as a consultant to the private sector and government, primarily in the areas of labour economics and policy evaluation. In recent years, he has served as an expert advisor to Prairie Research Associates (PRA) Inc. and Human Resources and Skill Development Canada as well as to CAC Manitoba through the Public Interest Law Centre. He has provided expert opinion to the Public Utilities Board on behalf of CAC Manitoba at the 2007 Hearing to Cap Payday Loan Fees, at the 2007, 2010, 2013 and 2014 Manitoba Public Insurance Rate Applications on the Rate Stabilization Reserve and investment strategy, and at the 2014 Needs for and Alternatives to Review of Manitoba Hydro's Preferred Development Plan.

His professional expertise in applied microeconomics and applied econometrics¹ provides a foundation for the analysis of issues related to the management of risk by firms and to the assessment of risk using modern economic and statistical techniques. His expertise also provides a framework to assess the contributions of equities, bonds and interest rates to investment risk.

Dr. Simpson's curriculum vitae is filed separately.

¹ Applied microeconomics is the study of the behavior of individual agents (e.g., firms and households) in the market using modern theory and empirical methods. It seeks to apply the analysis to practical problems such as risk management and investment strategies. Applied econometrics uses specific statistical techniques, particularly regression methods, to analyze and predict economic behavior and apply it to practical social problems.

A Note on an Interest Rate Forecast Risk Factor (IRFRF) and the RSR Target Established by the Dynamic Capital Asset Test (DCAT)

Manitoba Public Insurance is applying for a rate increase effective March 1, 2017 that includes a 2% overall rate increase in Basic Autopac plus an Interest Rate Forecast Risk Factor (IRFRF) whose form and magnitude would be determined by a collaborative process between the PUB, interveners and MPI (MPI Rate Application, Volume 1) but could be 2.3% or higher (PUB(MPI) 2-25). It deems the IRFRF to be a critical element of the application to “mitigate **the risk** of a deficiency in premiums resulting from the impact of an interest rate forecast with too steep a trajectory over the forecast period” (Vol. I, p.7; emphasis mine). MPI argues further that the IRFRF “is necessary to **prevent potential rate shock**. The amount of the IRFRF would ultimately reflect the PUB’s assessment, informed by input from the Corporation and other parties, of **the extent of the risk and risk tolerance** in the context of financial integrity and smooth and stable Basic insurance rates” (PUB(MPI)2-25; emphasis mine). These arguments repeat those already used to justify retained earnings in the RSR determined by the DCAT report and an established collaborative process with PUB, interveners and MPI.

It is important to note that there is no other insurance company or jurisdiction in Canada or North America that uses a concept such as the suggested IRFRF. By MPI’s own admission, in response to information requests CAC (MPI) 1-94 and PUB (MPI) 2-25, the IRFRF is a concept invented by the Corporation. MPI has made extensive collaborative effort to develop its version of the DCAT methodology generally practiced in the Property & Casualty (P&C) industry to deal with risk as the basis for determination of a RSR target to mitigate rate shock. It is therefore both surprising and confounding that MPI would want to introduce an IRFRF that has not been accepted for use by any other P&C insurance company in Canada.

The risk associated with a forecast that overstates the rate of growth of interest rates between 2017/18 and 2020/21 is already addressed in the DCAT Report (Volume II). The Report identifies the three most important risk factors facing the corporation, one of which is the interest rate decline scenario. This scenario considers the risk associated with “interest rates [that] decline or remain at sustained low levels over the forecast period” (Vol. II, RSR-2, P.37). Since the scenario considers sustained low interest rates relative to a base forecast of interest rates rising according to a consensus bank forecast (p.22), this is exactly the same risk scenario cited for the IRFRF. The interest rate decline scenario is also an important component of the combined scenario which is ultimately used to justify a RSR minimum target level for total equity of \$181 million.

Moreover, the methodologies used to calculate the IRFRF and the DCAT interest rate decline scenario involve exactly the same elements:

- (1) Both calculations start with the consensus bank forecast of interest rates, referred to as the Standard Interest Rate Forecast (SIRF) in determining the IRFRF, as the base scenario from which the risk of interest rate stagnation is measured. In the IRFRF, the SIRF is compared to a naïve forecast in which interest rates remain at their current levels throughout the forecast period. In the DCAT interest rate decline scenario, the SIRF provides the basis for the Base Scenario and the test is whether total equity in the RSR is sufficient if interest rates remain below the SIRF at an interest rate floor calculated from the 10-year Government of Canada bond rate.
- (2) Both calculations establish an interest rate floor that is the effective basis for the risk scenario. Rather than adopt the naïve forecast, which could produce an IRFRF of 5%, the preferred IRFRF is calculated from a “50-50 weighting between the SIRF and the naïve forecast” (PUB(MPI) 2-25). This scenario represents an interest rate that rises from its current level of 1% to about 2¼% by 2020/21, rather than the SIRF consensus forecast of 3½%, as in PUB(MPI) 2-25, Figure 1. In the interest rate decline scenario in the DCAT, the interest rate floor is determined by the monthly minimum 10-year Government of Canada bond rate from 1989 to the present, which is 1.19% (Vol.II, RSR2, p.37). As shown in the DCAT report (p.42), the floor is binding, since interest rates for the 1-in-40 risk tolerance scenario go immediately to this floor and remain there.
- (3) The interest rate floors that are the fundamental component of the calculation of both the IRFRF and the DCAT interest rate decline scenario are arbitrary in that they lack any empirical foundation in past history of interest rate movements. We simply do not have modern evidence from a past low-interest rate experience to provide guidance on what an appropriate interest rate floor might be. As a result, we cannot assign a proper risk tolerance to the interest rate decline scenario or to the IRFRF “50-50” scenario, as we can to the equity decline and high-loss ratio scenarios in the DCAT. It is difficult to see how any proposed “assessment . . . of the extent of the risk and risk tolerance” for the IRFRF would have any reasonable foundation.

Since the elements of the IRFRF scenario and the interest rate decline scenario are identical, it is difficult to see why the single risk of interest rates falling short of the consensus bank forecast should be counted twice. Yet that is what is proposed, since the IRFRF rate increase is recommended in addition to a proposed target minimum

level for the RSR that is justified by an interest rate decline scenario alone and as part of the combined scenario.²

There is also a confusing inconsistency between accepting the SIRF (the DCAT)³ and denying it (the IRFRF). The argument that the RSR is not equipped to handle systemic forecast errors (PUB(MPI)1-13) seems to argue that interest rate stagnation below the SIRF is a foregone conclusion and hence not a risk (despite language justifying the IRFRF to the contrary), but the interest rate decline scenario argues just the opposite, that it is a potential risky outcome that would justify retaining funds in the RSR. The argument for an IRFRF also suggests that the interest rate forecasting from Canadian banks that has been relied on in the past is now transparently faulty and not credible despite its continued use in the Base Forecast for the DCAT.

Since the DCAT interest rate decline scenario uses the same methodological elements to assess the risk of interest rate stagnation as the IRFRF, the IRFRF is not needed to protect the financial position of MPI. The IRFRF calculates the necessary rate increase **when** interest rate stagnation occurs in the future, while the DCAT calculates the RSR necessary to protect motorist from a rate increase **if** interest rate stagnation occurs in the future. Since prediction of the future is inherently risky, since there is no precedent for an IRFRF rate adjustment elsewhere, and since we have a well established procedure for the assessment of the risks facing MPI in the determination of the RSR (including a RSR surcharge to rates, if necessary), the proposal for an IRFRF should be abandoned.

Wayne Simpson
September 26, 2016

² We will review the revised DCAT promised in PUB/MPI 2-25 to determine whether and the extent to which the double counting of a single risk continues.

³ We will review the revised DCAT promised in PUB/MPI 2-25 to determine the degree to which it continues to rely on the SIRF.